

CHAPTER V

CONCLUSION

The incompatible nylon 6/LDPE blend could be compatibilized using the interfacial active ionomer as a compatibilizer. Surlyn 9020 ionomer could be used as a compatibilizer to increase compatibility of the blend. Surlyn[®] contains both polar parts, methacrylic acid neutralized with zinc counter ions, and nonpolar part, LDPE. These formed dipole-dipole interaction and hydrophobic interaction with nylon 6 and LDPE respectively. These interactions could improve mechanical and physical properties of the blends. Tensile properties, impact properties and hardness were increased significantly as the ionomer content increased due to the higher compatibility of the blend. In morphological study, the ionomer compatibilizer was increased and improved the strength of the interfacial between dispersed phase and matrix phase. The dispersed phase of the compatibilized blend became finer and smaller than the uncompatibilized one due to the ability of ionomer to reduce the interfacial tension between the dispersed phase and the matrix. At approximately 1 % of ionomer, maximum reduction in dispersed phase size of the blend was observed. This is the quantity of ionomer required to fully cover and interface between the two polymers.